

REMARKS

Claim 1 has been amended. Support amended Claim 1 can be found on page 6, lines 21-24, page 4, lines 19-22 and Examples 7 and 8. Claims 13-21 have been added. Support for Claims 13-21 can be found in the original subject matter of Claim 1, 2 and 6-12, as well as in the aforementioned disclosure. Thus, no new matter has been added. Upon entry of this Amendment, which is respectfully requested, Claims 1-21 will be pending.

Response to Claim Objections

Claims 1 and 3 were objected to because “z” is defined in the claims, however, the character “z” does not appear in any of formulae (I)-(IV).

Claim 1 has been amended to correct a typographical error and make formula (IV) consistent with the corresponding PCT Application. Accordingly, withdrawal of the objection is respectfully requested.

Response to Claim Rejections Under § 102

Claims 1, 3, and 7-10 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,663,226 to Scholl et al. Applicants respectfully traverse.

Scholl fails to disclose or suggest a silane compound according to the presently claimed formula (I) wherein R^4 is represented by formula (III) or (IV), as recited in present Claim 1.

In addition, Scholl discloses that $x=1$ to 6 in S_x and typically, $x=4$. *See*, Examples 1-5. In contrast, present Claim 1 recites “ $m = 1$ to 2” and “ x , y and z each represent a number of 2 or greater and smaller than 4.” Further, Scholl does not disclose decylene, phenylene, or methylphenylethylene as in R^5 of new Claim 13. Thus, Scholl fails to anticipate or render obvious the present claims. Accordingly, withdrawal of the rejection is respectfully requested.

Response to Claim Rejections Under § 103

Claims 1-12 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Scholl. Applicant respectfully traverses.

Scholl discloses a silane compound having the same number “x” of sulfur chain and a large number of “x” such as 4 described in Examples 1 to 5.

In contrast, present Claim 1 recites “m” is limited to 1 to 2, and “x, y or z” is limited to a number of 2 or greater and smaller than 4. That is, the bond dissociation energy “S_m” is rather large compared to that of “S_x”, “S_y” or “S_z.” Thus, “S_x,” “S_y” and “S_z” bonds are severed more easily than those of “S_m.”

In addition, a silane compound of the present invention can control the severance of the sulfur chain in it, and thereby prevent rubber from scorching and improve the processability of rubber composition.

As demonstrated by Examples 5 to 8 and Comparative Examples 3 to 4, the compositions of Examples 5 to 8 achieve much lower Mooney viscosity and much longer Mooney scorch time than those of Comparative Examples 3 to 4. Further, the compositions of Examples 5 to 8 achieve much higher Elongation at break than those of Comparative Examples 3 to 4.

As to new Claims 13, R⁵ is decylene, phenylene, or methylphenylethylene as noted above. Scholl discloses ethylene group, hexylene group, p-xylylene group and melamine-ring derivative residues.

As can be seen from a comparison of Example 2 (R⁵ = decylene group) with Example 1 (R⁵ = hexylene group) in Table 1-1, the composition of Example 2 has lower Mooney viscosity,

much higher Elongation at break, much higher Strength at break and much higher Abrasion resistance than that of Example 1.

Accordingly, Scholl fails to render obvious the present claims. Withdrawal of the rejection is respectfully requested.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.


Respectfully submitted,

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